An Interdisciplinary Investigation of Puget Sound Beach Dynamics

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Abstract

As a legacy of Pleistocene glaciation, Puget Sound differs geologically in significant ways from other large estuaries in North America. It is apparent that Puget Sound beaches have ecological, chemical, and physical structure and processes distinct from other systems and that these factors are important to threatened and endangered species, such as Puget Sound chinook and summer chum salmon. However, systematic studies of Puget Sound beaches are unusual and many questions about key processes remain open and unexplored.

The University of Washington, the State of Washington and the U.S. Geological Survey have established an interdisciplinary nearshore research team to examine this unique nearshore environment. On the west coast of Camano Island, we have initiated a comprehensive monitoring program to establish a baseline dataset against which models of nearshore sediment transport, chemical and nutrient cycling, and habitat structure and change can be calibrated. This data presently includes high resolution bathymetric LIDAR across the shoreline, low-altitude air photography, in situ wind and wave recordings, and monthly sediment sampling information. The ultimate goal is to link nearshore dynamics to predictions of ecological responses and to predictions of the consequences of human interruptions of these natural relationships.